

Title of the invention

DRYWALL-TRIMMING ACCESSORY AND METHODS FOR MAKING SAME AND/OR PREPARING SAME TO ADHERE TO DRYWALL-FINISHING COMPOUND

5 Technical Field of the Invention

This invention pertains to a drywall-trimming accessory, which is made from a polymeric material, and to methods for making the drywall-trimming accessory and/or preparing the drywall-trimming accessory to adhere to a drywall-f

finishing compound.

10 Background of the Invention

Heretofore, it has been known to make various drywall-trimming accessories from various polymeric materials. Thus, it has been known to extrude certain drywall-trimming accessories, such as elongate strips, from polyvinyl chloride, and to mold, as by injection molding, other drywall-trimming

accessories, such as two-way and three-way corners, from polystyrene or from acrylonitrile-butadiene-styrene. Also, it has been known to form, as by thermoforming, other drywall-trimming accessories, such as ceiling medallions, from suitable polymeric materials.

Numerous examples of such elongate strips, two-way corners, and three-

way corners are available commercially from Trim-Tex, Inc. of Lincolnwood, Illinois, and are disclosed in its printed and online catalogs and in its patents including United States Patents No. 5,243,797, No. 5,313,755, No. 5,477,643, No. 5,481,845, No. 5,740,642, No. 5,752,353, No. 5,813,179, No. 5,904,016, No. D412,673, No. 6,119,420, No. D431,304, No. 6,145,259, No. 6,360,503, and No.

6,571,520, the disclosures of which patents are incorporated herein by reference.

Other examples of such elongate strips, two-way corners, and three-way corners are disclosed in United States Patent Re. 34,547, the disclosure of which patent is incorporated herein by reference.

It is understood that many drywall-finishing compounds, which are called “mud” in trade parlance, are formulated to adhere well to fibrous substrates, such as paper faces of drywall panels and paper tapes used to cover joints between drywall panels. Commonly, however, such drywall-finishing compounds tend not to adhere well to polymeric drywall-trimming accessories, unless primers have been applied to areas where drywall-finishing compounds are intended to adhere, unless fibrous materials have been applied to those areas, as exemplified in United States Patents No. 5,752,353 and No. 5,904,016, or unless those areas have been provided with striations, as exemplified in United States Patent Re. 34,547, provided with grooves, or abraded, as by sanding.

Heretofore, it has been known to employ staples or other fasteners, sprayed-on or other adhesives, or both to cause polymeric drywall-trimming accessories to adhere to underling drywall panels. Because drywall-finishing compounds tend not to adhere well to polymeric drywall-trimming accessories, so-called “mud setting” techniques, which employ drywall-finishing compounds, rather than sprayed-on or other adhesives, to cause polymeric drywall-trimming accessories to adhere to underling drywall panels are disfavored, unless staples or other fasteners are employed as well.

Heretofore, it has been known to make various other building and trimming products from cellular polymeric materials. An example is AZEK™ beadboard, which is made from cellular polyvinyl chloride and which is sold in standard trim and sheet sizes, for porch ceilings, wainscoting, soffits, and deck/hot tub

surrounds, by Compression Polymers Group of Moosic, Pennsylvania. At its cut edges and where such beadboard has been grooved, as by milling, open cells are visible, at least under low-power magnification via a jeweler's or watchmaker's loupe.

5 **Summary of the Invention**

10 This invention provides a drywall-trimming accessory having a flange, which has two expansive surfaces facing oppositely. The drywall-trimming accessory is made from a cellular polymer. At least part of at least one of the expansive surfaces of the flange or of each diverging flange is characterized by open cells of the cellular polymer. Both expansive surfaces of the flange may be similarly characterized. If the flange is one of two diverging flanges, at least part of at least one of the expansive surfaces of each flange or at least part of each expansive surface of each flange may be similarly characterized. In a contemplated installation of the drywall-trimming accessory, the same part of each expansive surface, where characterized by open cells of the polymeric material, is
15 contacted by a drywall-finishing compound, which penetrates said cells.

20 This invention provides a method for making a drywall-trimming accessory having a flange, which has two expansive surfaces facing oppositely, and/or for preparing the drywall-trimming accessory to adhere to a drywall-finishing compound contacting at least part of at least one of the expansive surfaces of the flange. The drywall-trimming accessory is made from a cellular polymer. A superficial layer is removed from the same part of the same one of the expansive surfaces of the flange or from the same part of each expansive surface of the flange so as to reveal open cells of the cellular polymer. If the flange is one of two
25 diverging flanges, a superficial layer may be thus removed from at least part of at

least one of the expansive surfaces of each flange or from at least part of each expansive surface of each flange. In a contemplated installation of the drywall-trimming accessory, the same part of each expansive surface characterized by open cells of the polymeric material is contacted by a drywall-finishing compound, which penetrates said cells.

Preferably, if the drywall-finishing accessory is an elongate strip, the polymeric material is polyvinyl chloride. Preferably, if the drywall-trimming accessory is a two-way or three-way corner, the polymeric material is polystyrene or acrylonitrile-butadiene-styrene. Where the drywall-finishing material penetrates open cells of the polymeric material at an expansive surface of a flange of the drywall-trimming accessory, the drywall-finishing material tends to adhere well to the expansive surface without any need for primers or fibrous materials to have been applied to areas characterized by said cells or for those areas to have been grooved, striated, or abraded, as by sanding.

Brief Description of the Drawings

Figures 1 and 2 are adapted from the drawings of United States Patent No. 6,571,520, *supra*. Figure 1 is a perspective view of a drywall-trimming strip, which embodies this invention. The drywall-trimming strip has two diverging flanges. In Figure 1, holes in the diverging flanges are illustrated in broken lines.

Figure 2 is an end view of the drywall-trimming strip, as installed along a corner defined by two drywall panels, which are illustrated in broken lines. In Figure 2, on an exterior surface of each diverging flange, a drywall-finishing material has been applied, as illustrated in broken lines.

Figure 3 is a perspective view of a three-way drywall-trimming corner, which embodies this invention. Figure 4 is a perspective view of a two-way drywall-trimming corner, which embodies this invention.

Detailed Description of the Illustrated Embodiment

5 As illustrated in Figures 1 and 2, a drywall-trimming strip 10 embodying this invention has a central portion 20, which may be also called a "bullnose" portion because of its curvature, and two diverging flanges 30, which diverge from the central portion 20. In Figure 2, the strip 10 is illustrated as having been installed along a corner defined by two drywall panels 40, each of which has an
10 outer, paper layer 42, and inner, paper layer 44, and an intermediate, gypsum core 46.

Each flange 30 has two expansive surfaces, namely, an expansive surface 32 that becomes an outer surface of said flange 30 when the drywall-trimming strip 10 is installed and an expansive surface 34 that becomes an inner surface of said
15 flange 30 when the drywall-trimming strip 10 is installed. Each flange 30 has an array of apertures 36, which may be circular holes, as illustrated, or which may be elongate slots, or otherwise shaped apertures.

When the drywall-trimming strip 10 is installed, suitable means, such as staples, a sprayed-on adhesive, or both, are employed to mount the flanges 30 to
20 the drywall panels 40, so that the expansive surfaces 34 of the flanges 30 face and approximate the outer, paper layers 42 of the drywall panels 40. After the flanges have been mounted to the drywall panels 40, a drywall-finishing compound C is applied to the expansive surfaces 32 of the flanges 30, such that some of the drywall-finishing compound C applied thereto penetrates the apertures 36 and
25 adheres well to the outer, paper layers 42 of the drywall panels 40.

The drywall-trimming strip 10 is extruded from a cellular polymeric material, preferably from cellular polyvinyl chloride, which has been injected with a suitable gas so as to become cellular or which has employed a blowing agent to become cellular. Injection with a suitable gas is preferred to employment of a blowing agent. As extruded from a cellular polymeric material, preferably from cellular polyvinyl chloride, the drywall-trimming strip 10 has macroscopically smooth, macroscopically non-porous surfaces, particularly but not exclusively the expansive surfaces 32, 34.

Before the drywall-trimming strip 10 is installed, a superficial layer is removed, as by milling, from each flange 30, on the expansive surface 32 that becomes the outer surface when the drywall-trimming strip 10 is installed, whereby to reveal open cells of the cellular, polymeric material. Said cells are visible, at least under low-power magnification via a jeweler's or watchmaker's loupe. Thus, when the drywall-finishing compound C is applied to the expansive surfaces 32 of the flanges 30, some of the drywall-finishing compound C applied thereto penetrates said cells, whereby the drywall-finishing compound C adheres well to the expansive surfaces 32 of the flanges 30.

Before the drywall-trimming strip 10 is installed, a superficial layer may be also removed, as by milling, from each flange 30, on the expansive surface 34 that becomes the inner surface when the drywall-trimming strip 10 is installed, whereby to reveal open cells of the cellular, polymeric material. Said cells are visible, at least under low-power magnification via a jeweler's or watchmaker's loupe. Thus, in an improvement over so-called "mud setting" techniques known heretofore, if the drywall-finishing compound C is applied to the outer, paper layers 42 of the drywall panels 40, to the expansive surfaces 34 of the flanges 30,

or to both, some of the drywall-finishing compound C applied thereto penetrates said cells, whereby the drywall-finishing compound C adheres well to the expansive surfaces 34 of the flanges 30.

As illustrated in Figure 3, this invention can be also embodied in a three-
5 way drywall-trimming corner 100, which has three legs 110, each having a "bullnose" central portion 112 with a tongue 114, which is adapted to fit under and to be adhesively secured to the "bullnose" central portion of a "bullnose" drywall-trimming strip, such as the strip 10. Each leg 110 has two flanges diverging at a right angle. Each of the flanges 120 of a given leg 110 and one of
10 the flanges 120 of an adjacent leg 110 are defined by a common, sheet-like portion of the corner 100. Each flange 120 has two expansive surfaces facing oppositely, namely, an expansive surface 122 that becomes the outer surface of said flange 120 when the corner 100 is installed and an opposite surface that becomes the inner surface of said flange 120 when the corner 100 is installed.

15 The corner 100 is molded, as by injection molding, from a cellular, polymeric material, such as cellular polystyrene or cellular acrylonitrile-butadiene-styrene. As molded therefrom, the corner 100 has macroscopically smooth, macroscopically non-porous surfaces, particularly but not exclusively the expansive surfaces of the flanges 120.

20 Before the corner 100 is installed, a superficial layer is removed, as by milling, from each flange 120, on the expansive surface 122 that becomes the outer surface of said flange 120 when the corner 100 is installed. Moreover, a superficial layer can be also removed, as by milling, from each flange 120, on the expansive surface that becomes the inner surface of said flange 120 when the
25 corner 100 is installed. Where the superficial layers have been removed, open

cells of the cellular, polymeric material are revealed and are visible, at least under low-power magnification via a jeweler's or watchmaker's loupe.

As illustrated in Figure 4, this invention can be also embodied in a two-way drywall-trimming corner 200, which has two legs 210, each having a "bullnose" central portion 212 with a tongue 214, which is adapted to fit under and to be adhesively secured to the "bullnose" central portion of a "bullnose" drywall-trimming strip, such as the strip 10. Each leg 210 has two flanges diverging at a right angle. One flange 220 of each leg 210 and one flange 220 of the other leg 210 are defined by a common, sheet-like portion of the corner 200. The other flanges 230 of the respective legs 210 meet at a right angle. Each flange 220, 230, has two expansive surfaces facing oppositely, namely, an expansive surface 222, 232, that becomes the outer surface of said flange 220, 230, when the corner 200 is installed and an opposite surface that becomes the inner surface of said flange 220, 230, when the corner 200 is installed.

The corner 200 is molded, as by injection molding, from a cellular, polymeric material, such as cellular polystyrene or cellular acrylonitrile-butadiene-styrene. As molded therefrom, the corner 200 has macroscopically smooth, macroscopically non-porous surfaces, particularly but not exclusively the expansive surfaces of the flanges 220, 230.

Before the corner 200 is installed, a superficial layer is removed, as by milling, from each flange 220, 230, on the expansive surface 222, 232, that becomes the outer surface of said flange 220, 230, when the corner 200 is installed. Moreover, a superficial layer can be also removed, as by milling, from each flange 220, 230, on the expansive surface that becomes the inner surface of said flange 220, 230, when the corner 200 is installed. Where the superficial

layers have been removed, open cells of the cellular, polymeric material are revealed and are visible, at least under low-power magnification via a jeweler's or watchmaker's loupe.

5 When either of the corners 100, 200, is installed, whenever a drywall-finishing compound is applied to the expansive surfaces, where the superficial layers have been removed and open cells of the cellular, polymeric material have been revealed, some of the drywall-finishing compound penetrates said cells, whereby the drywall-finishing compound adheres well to those surfaces.